

## THE USE OF CD-ROM DATABASES BY MALAYSIAN POSTGRADUATE STUDENTS IN LEEDS

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### ABSTRACT:

*A study was carried out with Malaysian postgraduate students in Leeds in 1995 to determine the extent and ease of use of CD-ROM databases. This findings from this study showed that only 58.3% of the Malaysian postgraduate students used CD-ROM databases. The users found CD-ROM databases are useful information sources for thesis preparation, writing research papers, articles, books etc. They unanimously agreed that the CD-ROM databases should be introduced to their organisations' libraries and information centres in Malaysia as they allow for quick access to worldwide literature, are very comprehensive and speed up literature searching and prove to be an asset to research work. The remaining Malaysian postgraduate students (41.7%) did not use CD-ROM databases for a variety of reasons such as ignorance about their existence or techniques of use, easily available facility for on-line search, non-availability of databases at the work place, etc. In some cases, searching CD-ROM databases was not found essential for their study or research. The percentage of non-use was high and the study recommends that efforts should be made by the university libraries to promote their CD-ROM services in a way that would also attract non-users. Non-users themselves should be made aware of the availability of CD-ROM databases and other information sources.*

**Keywords:** CD-ROM search; CD-ROM use; Malaysian students; Foreign students, Malaysian; Information search; Academic research; Literature search; Postgraduate students.

### INTRODUCTION

Every year, a growing number of Malaysians pursue their postgraduate studies overseas. Most of them are employed by various universities, research institutions or ministries in Malaysia and are sponsored by their agencies. The government strongly feels that this move would provide their 'employees' with the necessary exposure to the increasing technological innovations that would benefit the country.

#### Compact Disc Read-Only Memory

CD-ROM is the acronym for Compact Disc-Read Only Memory. It is a hard wearing disc measuring only 12 cm in diameter and 1.2 mm thick. It can store all types of data that can be represented in digital form and one disc stores approximately 600 Mb of data or 250,000 A4 pages of text.

CD-ROM became a popular medium for the storage and retrieval of bibliographical and full-text databases in the mid-1980's.

Task Force Pro Libra in its directory entitled, *The CD-ROM directory '94 with multimedia CD's* (1994), identified only 48 titles in 1987 and this subsequently increased to 8200 titles as at January 1995. The directory also indicated a steady increase in the number of CD-ROM and multimedia titles which are commercially available world-wide and is estimated to stand at 9500 titles.

Libraries and information centres responded favourably and very quickly to CD-ROMs. They saw it as an easy and economical way of storing vast amount of information. With wide subject coverage and information type, it was seen by many as a cheaper alternative to online searching, especially in developing countries where high telecommunication costs make online searching restrictive. When used together, the CD-ROM databases can be used for retrospective searching, for refining search strategies and for end-user searching, whilst the online databases can be used for searching current information which is not available on the CD-ROM databases.

#### **CD-ROM End-User Studies**

Faries (1992) identified three categories of CD-ROM end-user studies : a). studies that look at several libraries' initial impressions of CD-ROM databases; b). studies that focus on specific category of users, and c). studies that compare two or more CD-ROM databases by users.

Not much has been done with postgraduate students as end-users in an academic library situation. Most of the studies focus on the end-user as a group and not identified at lower levels, eg. undergraduate

students, postgraduate students, faculty members, etc. Numerous studies have been conducted on or about the use of the MEDLINE on CD-ROM when compared to the other available databases.

### **CD-ROMS IN DEVELOPING COUNTRIES**

In developing countries, those students who have returned home after their studies abroad are responsible in some cases for bringing awareness about CD-ROM technology to their country. Wang (1992) reported that in early 1983, a Chinese postgraduate student who was studying library science in the United States, wrote about CD-ROMs and their usefulness to librarians in China. This generated sufficient interest in China and by 1989, there were 30 CD-ROM applications used in 56 libraries in China. By 1990, there were 100 CD-ROM facilities and this was expected to double in 1991 and again double in 1992. As in other developed countries, major subscribers are universities and specialised information institutes situated in big cities such as Beijing, Shanghai, Tianjing, Nanjing and Dalian.

In Kanamugire's (1994) studies on CD-ROM use at the King Fahd University of Petroleum and Minerals, Saudi Arabia, substantial use of this service by post-graduate students has been reported. The users felt that the "searching is useful and exciting", CD-ROMs are user-friendly, CD-ROMs have massive storage capacity, they are able to conduct their searches without the need to worry about the time or cost incurred and achieved a high degree of satisfaction. In



1991/1992, 770 CD-ROM searches were conducted and this increased to 2884 in 1992/1993. Seventy-five percent of CD-ROM users printed citations. However, 79 online searches were conducted in 1991/1992 and this dropped to only 29 in 1992/1993. The substantial increase in CD-ROM searching further emphasizes the importance of CD-ROM databases. In developing countries, it is a cheaper alternative and the references obtained only lack up-to-dateness which can be easily compensated by conducting online searching for current years only. Kanamugire also noted that for 1992/1993, 52% of CD-ROM searches were carried out by undergraduates and the remaining 48% by graduates, faculty, research assistants and staff. East (1991) noted the same trend in his study. He concluded that the undergraduates have a higher preference for CD-ROM databases when compared to research or graduate students.

In 1992, UNESCO set up a Clearing House for the promotion and dissemination of information about CD-ROMs within its member states (Abid and Pellissier, 1994). Prior to that, an international survey was conducted to assess the needs of the Member States. About 62.8 % favoured online access and 52.5% favoured CD-ROM. The study also revealed that CD-ROMs would greatly assist libraries in developing countries to provide quick access to information. Due to financial constraints, researchers in developing countries are unable to attend international meetings, subscribe to journals or even buy books. Thus, CD-ROMs have made it possible for libraries and information centres to provide vast amount of information in a compact and user-friendly format.

Abid and Pellissier (1994) hoped that "CD-ROM will help libraries in developing countries to leap ahead into the 21st century". To facilitate this, UNESCO and ADONIS have granted free subscriptions to the ADONIS CD-ROMs to ten institutions in Africa, the Arab states, Asia, Europe, Latin America and the Caribbean.

Similarly, the Royal Tropical Institute, Koninklijk Instituut voor de Tropen (KIT) based in Amsterdam has carried out 25 CD-ROM projects in more than 25 developing countries in Asia, Africa and the Caribbean (Keylard, 1993). KIT's expertise ranges from giving technological advice to general project management.

The First International Conference on the Use of CD-ROM in Developing Countries was held in Khartoum in 1990. The participants unanimously agreed that CD-ROMs are the answer to the so-called "information gap" or "book famine" which is being experienced in developing countries.

UNESCO is currently conducting an inventory of CD-ROMs in developing countries. UNESCO feels that there is a need to assess the CD-ROM situation in developing countries as well as Eastern and Central Europe. It is hoped that this inventory would lead to the establishment of an international CD-ROM Clearinghouse for the developing countries, Eastern and Central Europe. It would act as a CD-ROM observatory and provide an overview of the CD-ROM market in developing countries.

CD-ROM technology is acknowledged by many as a good medium for the dissemination of information to developing countries.

But, no one has actually questioned the suitability of a product that had been developed for and by Western countries to the developing countries. Studies (Adkins, 1994) have shown that the United States of America has 2121 CD-ROM database publishers. In contrast, there are 31 in Mexico, 25 in Israel, 8 in Pakistan, 6 in Greece and 1 in Puerto Rico. This imbalance has to be addressed. The information generated for and by developed countries may not be totally relevant to developing countries. There is a need for more localized CD-ROM databases which identify regional problems and provide suitable solutions.

### **CD-ROMS IN MALAYSIA**

CD-ROM technology is well established and available in all kinds of libraries and information centres worldwide. It is seen by many as a good alternative to print and can be used by the end-users directly without the need for an intermediary.

However, before they can be introduced into a library or information centre, these CD-ROM databases have to be tried and tested. In developing countries, their acquisition has to be justified accordingly. Although their acquisition is costly, it is regarded by many as a corporate shared resource which can be used repeatedly.

In the case of Malaysia, the overseas postgraduate students are the ones who are in the best position to try and test the different CD-ROM databases because most of the universities they are attending would have them in their respective libraries. There would also be a wide range of

databases to compare their usefulness. Only after interacting with the CD-ROM databases would they be able to vouch for their usefulness and make recommendations for their installation in their respective offices in Malaysia.

CD-ROM technology is currently available in libraries and information centres throughout Malaysia. The academic libraries were the first to adopt CD-ROM technology in their daily operations. Presently, the National Library and all the eight academic libraries have a variety of CD-ROM databases within their core collection (Appendix 1). Special libraries and information centres, especially those that are supporting agricultural and industrial research organisations, are actively adding CD-ROM databases to their collection (Appendix 2). Other special libraries, public and school libraries are far behind in their adoption and implementation of CD-ROM technology. Money is often cited as the main factor for the absence of CD-ROM technology in a Malaysian library. CD-ROM products are much more expensive than their print equivalent. When comparing the costs of print, CD-ROM and online, Phiri (1993) concluded that "out of the three media, online is the most expensive whereas print is the least expensive". Yaacob (1992) stated that the budget of most of these libraries in Malaysia are spent on their basic requirements - collection development, staffing and maintenance.

Malaysia is not lagging behind in the implementation of CD-ROM technology. Yaacob (1992) identified 51 CD-ROM databases which are available in the National Libra-



ries and eight academic libraries throughout Malaysia in 1992. Yaacob (1993) also noted that this figure has increased to 69 in 1993. The Union Catalogue of CD-ROMs available in libraries in Malaysia as in April 1994, listed 103 CD-ROM databases which were available at the same places. This is a substantial increase within a period of three years and all these libraries receive funding from the federal government. It is a demonstration of the Malaysian government's commitment to the use of information technology within the public sector.

Yaacob (1992) further identified the use of ten CD-ROM databases in eight special libraries in 1992 - Forest Research Institute of Malaysia (FRIM), Malaysian Agricultural Research Development Institute (MARDI), National Petroleum (PETRONAS), Palm Oil Research Institute (PORIR), Rubber Research Institute of Malaysia (RRIM), Standards and Industrial Research Institute of Malaysia (SIRIM) and the Tun Dr. Ismail Centre for Atomic Research (PUSPATI). This increased to 22 CD-ROM databases in nine special libraries in 1993 (Yaacob, 1993). The ninth special library is that of the Dewan Bahasa dan Pustaka. All these special libraries are affiliated to prominent research institutions which get their funding directly from the Federal government. The CD-ROM databases in these special libraries are more specialised when compared to those of the academic libraries.

The Malaysian government is fully aware of the importance of information. The launching of the Vision 2020 Programme by the Prime Minister in 1990 echoed his hope for the creation of an industrialised

country with a society rich in information by the year 2020. In his speech, Dr. Mahathir Mohamad stated that "... it can be no accident that there is today no wealthy, developed country that is information-poor and no information-rich country that is poor and undeveloped" (Rustam, 1993). He is aware of the impact that information has on the development of a country and he sees it as an important component of his hope for an industrialised Malaysia. With information being seen as a critical resource, new information technologies are therefore seen as a new means of providing the much needed information. CD-ROM is one such technology because of its ability to provide a fast and efficient way of locating information.

## **AIM AND OBJECTIVES**

A study was conducted to determine the extent and ease of use of CD-ROM databases by Malaysian postgraduate students in Leeds. Within this overall aim, the following objectives were set :

- a. to establish the level and nature of usage of CD-ROM databases;
- b. to assess the usefulness of the CD-ROM databases in their area of study;
- c. to identify problems encountered when using the CD-ROM databases;
- d. to identify non-users and their reasons for non-use;
- e. to establish the availability of CD-ROM databases in their workplace in Malaysia, and;
- f. to reinforce the need for CD-ROM databases in their workplace.

METHODOLOGY AND SAMPLE

The mail questionnaire approach was adopted in this study. The population size was 60 and the quasi-random sampling method was used in the sampling process which involved a list of names and addresses. A total of 15 names and addresses were eliminated and the remaining 45 names and addresses made up the sample. The questionnaire comprised of both open and close-ended questions (Appendix 3).

The data collected was analysed manually. Answers to the open-ended questions were coded so that like answers could be placed together. Responses to both the open and close-ended questions were then tallied and tabulated to enable inferences to be made from them.

A total of 45 questionnaires were sent out and 24 completed questionnaires were returned, giving a response rate of 53.3% and a corresponding non-response rate of 46.7%. From the start of the study it was assumed that the population is homogenous and comprises of individuals with similar characteristics. They were all Malaysian postgraduate students, sponsored by the Malaysian government. All of them have had previous working experience in a government institution or body. One can therefore, conclude that the respondents are representative of the whole population.

Out of a total of 24 respondents, 54.2% are between the ages of 25 to 35 years and 45.8% between 35 to 45 years. All of the respondents were working before coming to Leeds and are still under contract with their employers in Malaysia (Table 1).

Table 1 : Respondents' Employers

| Place of Employment   | No. of employees |
|---|------------------|
| Cooperative College of Malaysia                               | 1                |
| Islamic Teachers' College                                     | 1                |
| Malaysian Telecoms (TELEKOM)                                  | 1                |
| Mara Institute of Technology (ITM)                            | 2                |
| Ministry of Education   | 1                |
| National University of Malaysia (UKM)                         | 4                |
| National Film Corporation (FINAS)                             | 1                |
| Pahang Professional Development Institute (IKIP)              | 1                |
| Public Services Department (JPA)                              | 1                |
| Sarawak State Education Department                            | 1                |
| Science University of Malaysia (USM)                          | 4                |
| Secondary Schools   | 2                |
| Standards & Industrial Research Institute of Malaysia (SIRIM) | 1                |
| Sultan Zainal Abidin Islamic College (KUZAS)                  | 1                |
| University of Malaya (UM)                                     | 1                |
| University of Technology of Malaysia (UTM)                    | 1                |
| Total   | 24               |

About 50% of the respondents were studying in the field of science and technology, and the remaining 50% in the field of humanities and social sciences. Within the science and technology group, 83.3% were pursuing their doctorate and the remaining 16.7% were studying for their Masters degrees. For the humanities and social sciences group, only 16.7% were pursuing their doctorate and 83.3% for their Masters degrees.



All the respondents were studying at the University of Leeds for their various post-graduate degrees (Table 2). There is an equal number of respondents doing the doctoral and Masters degree.

Table 2 : Respondents' Level of Study

| Level of Study | %    |
|----------------|------|
| Ph.D.          | 50.0 |
| M.A.           | 20.8 |
| M.Ed           | 20.8 |
| M.Sc.          | 8.4  |

## RESULTS

The study found that when the respondents were asked if they had used a CD-ROM database before coming to Leeds, 25% checked "yes". The remaining 75% did not use any CD-ROM database before coming to Leeds. Those who had checked "yes" were from academic institutions in Malaysia and used the CD-ROM databases at their respective institute/ university libraries. These databases were mainly used for locating the necessary items for their everyday work and research. When the respondents were asked whether they had used a CD-ROM database in their current university in Leeds, 58.3% checked "yes" and 41.7% checked "no".

### Users

Table 3 shows the percentage of users by their course and level of study. The majority of the users were studying for their doctorates. The following section presents the results to individual questions.

Table 3 : Percentage of Course and Level of Study

|                                | Ph.D. | Masters | Total |
|--------------------------------|-------|---------|-------|
| Science and technology         | 50.0% | 7.2%    | 57.2% |
| Humanities and Social Sciences | 14.3% | 28.5%   | 42.8% |
| Total                          | 64.3% | 35.7%   | 100%  |

Table 4 shows the percentage of users in Malaysia and their level of study. Again the majority of the users were those doing their doctorates.

Table 4 : Percentage of Users in Malaysia and Level of Study

|                         | Ph.D. | Masters | Total |
|-------------------------|-------|---------|-------|
| Used in Malaysia        | 35.8% | 7.2%    | 43.0% |
| Did not use in Malaysia | 28.5% | 28.5%   | 57.0% |
| Total                   | 64.3% | 35.7%   | 100%  |

### Purpose of searches

About 42.9% of the users utilised the CD-ROM databases for thesis/dissertation preparation, 32.1% for writing research papers and the remaining 25% used them for writing articles/books for publication. The responses indicated that the users utilised the CD-ROM databases for a variety of purposes.

### Frequency of using the CD-ROM databases

The responses given for frequency of use of the CD-ROM databases by the users are listed in Table 5.

Table 5 : Frequency of Use

| Frequency             | %     |
|-----------------------|-------|
| Once a week           | 7.2%  |
| More than once a week | 21.4% |
| Once a month          | 28.6% |
| Once a semester       | 21.4% |
| Others                | 21.4% |

For users who had checked "others", the frequency of use was given as "not much", "whenever necessary" and "depended on the stage of the course - in the first year, once a month, then gradually decreased afterwards".

#### **Attendance of training sessions prior to use**

The majority of the users (92.8%) did not attend any formal training prior to use and only 7.2% received training. The training given was in the form of a one hour talk about CD-ROM databases by the librarian-in-charge. One user commented that the system learned "through trial and error". Another commented that it was "easy to use, no training required, those that are not user-friendly are not popular anyway".

#### **Ease of using CD-ROM databases**

The results showed that the majority of the users found the CD-ROM databases easy rather than difficult to use. About 50% found the CD-ROM databases "very easy" to use, 42.8% found them "easy" to use and only 7.2% found it "difficult" to use. Only 42.9% of the users have had previous experiences with CD-ROM databases. Interestingly 92.8% of the users have had no formal training and 92.8% of them found the CD-ROM databases easy to use. There-

fore, the absence of training has had no significant effect on the ability to use the CD-ROM databases. Even without training, the users felt that they were able to use the CD-ROM databases confidently.

#### **Satisfaction with CD-ROM search results**

When asked whether the users were satisfied with their CD-ROM search results, 28.6% were "very satisfied" and 57% were "satisfied". Only 7.2% were "neither" satisfied nor dissatisfied. The users stated that the "CD-ROM database used is not complete, sometimes misses the target, and the database they had used only covered items that were listed from 1980 and not before that". A further 7.2% were "dissatisfied" and no reasons were given for this dissatisfaction.

#### **Usefulness of references obtained**

The users were unanimous in agreeing to the usefulness of the references obtained through CD-ROM databases. About 85.6% checked "yes" and only 7.2% checked "no". Surprisingly, another 7.2% checked "neither" and it would be very interesting to know their reasons for saying so.

#### **Availability of documents in university library**

All the users found "some" materials from references in their university library. This is an anticipated response. With increasing journal subscription costs and decreasing book budgets, most academic libraries have to be selective in their journal subscription.

#### **Amount of request made for Inter-Library Loan (ILL)**

An overwhelming 78.6% checked "yes" and 21.4% checked "no". This was rather ex-



pected because most of the literature had suggested that CD-ROM database searching would lead to an increase in the number of ILL requests.

#### **Use of printed abstracts and indexes**

About 92.8% of the users checked "yes" and 7.2% checked "no". From this result, it seems that the majority of the users were well aware of the need to supplement their CD-ROM database searches with a manual search of printed abstracts and indexes.

#### **Reasons for preferring CD-ROM databases**

About 92.8% of the users responded and the remaining 7.2% did not answer the question at all. Various reasons were given for favouring CD-ROM databases and they are listed in Table 6. It is evident that the users were well aware of the advantages and benefits of CD-ROM databases. It is interesting to note that the reasons given by the users are also listed as advantages of CD-ROMs in many studies.

Table 6 : Reasons for Preferring CD-ROM Databases

| Reasons                       | %   |
|-------------------------------|-----|
| Aids literature searching     | 20% |
| Easy to use                   | 20% |
| Up-to-dateness of information | 15% |
| Comprehensive coverage        | 15% |
| Fast                          | 5%  |
| Compact                       | 5%  |
| User-friendly                 | 5%  |
| Easily accessible             | 5%  |

#### **Reasons for disliking CD-ROM databases**

About 64.9% of the users did not answer this question. Only 35.1% responded and

their dislikes were centred around the limited amount of information that they were able to obtain from the CD-ROM databases that they had used. 27.9% felt that the abstracts were not adequate and should be replaced by full-text databases. They also felt that the time period covered is not sufficient enough. In most databases, they only provided information from 1980 onwards. Anything prior to this date was not available on the CD-ROMs. A further 7.2% felt that the CD-ROM databases are far too expensive for small libraries. Again, these dislikes were similar to the disadvantages of CD-ROMs cited in other studies.

#### **Willingness to recommend the purchase of CD-ROM databases and the recommended databases**

The majority of the users would recommend the purchase of CD-ROM databases to their organisation's library or information centre. About 78.6% checked "yes" and 21.4% checked "no" because the system is already operational in their libraries. Those who had checked "yes" felt that the CD-ROM databases would allow for access to world-wide information. Literature searches can be conducted at a faster rate and with a more comprehensive coverage. CD-ROM databases would greatly assist research work and would be an asset to those who are doing research. When asked which CD-ROM databases they would recommend, 50% of the users stated that they would recommend the ones that they had come into contact with whilst in Leeds. About 28.6% did not really know which CD-ROM databases to recommend and 21.4% would recommend those that are relevant to their parent institutions.

**Non-users**

In this study, 41.7% of the respondents were identified as non-users of CD-ROM databases at their current university in Leeds. About 70% of the non-users did not have a CD-ROM database at their workplace in Malaysia. The remaining 30% were from academic institutions that did have CD-ROM databases.

Table 7 : Percentage of Non-users by Course and Level of Study

|                                | Ph.D. | Masters | Total |
|--------------------------------|-------|---------|-------|
| Science and technology         | 30%   | 10%     | 40%   |
| Humanities and Social Sciences | 0%    | 60%     | 60%   |
| Total                          | 30%   | 70%     |       |

**Reasons for non-use**

A variety of reasons were given for non use. Table 8 lists the reasons given by the non-users in this study. Non-users who stated that it was not necessary for them to use CD-ROM databases at their present stage of study/research did state that they would use the CD-ROM databases in the near future.

**RECOMMENDATIONS**

The following recommendations are made.

1. There is a very high percentage of non use of CD-ROM databases amongst the Malaysian postgraduate students in Leeds. More effort should be made both in Malaysia and in Leeds to encourage the usage of CD-ROM databases for literature searching.

The following measures are recommended:

Table 8 : Reasons for Non-use

| Reasons   | %   |
|---|-----|
| Not necessary to use at present stage of study/research | 50% |
| Do not know how to use it                               | 10% |
| No training given                                       | 10% |
| No information given                                    | 10% |
| Using online searching                                  | 10% |
| Do not have it at workplace in Malaysia                 | 10% |

a. In Malaysia, prospective postgraduate students should be introduced to CD-ROM databases and other information sources either at the National Library or at any of the university or other types of libraries.

b. The majority of the Malaysian population is not aware of CD-ROM databases or other advanced information sources that are available in the libraries throughout Malaysia. The librarians themselves should be active in promoting this service. They should write articles not only for the professional journals, but also for publications that are read by all levels of the Malaysian population, eg. newspapers and popular magazines. New information technology should be demonstrated and shown at "open days" or whenever the opportunity and need arises. The public must be kept informed of the existence and potential of not only CD-ROM databases, but also of other advanced information sources. Various activities can



be initiated to raise the public's awareness of new information technology, but it has to be undertaken on an ongoing basis for it to succeed.

c. In Leeds, the various university libraries should conduct library orientation/induction courses for foreign students. Information technology that is familiar to developed countries is often new technology to developing countries. Students from developing countries might not even be aware of an information source that is quite common to students from a developed country. Thus, library orientation or induction courses would be very helpful. On the other hand, all university libraries do conduct library orientation or induction courses for foreign students, but it is the students themselves who are unable to attend these courses for various reasons. Here, the International Students Offices and the Malaysian Student Society can assist in arranging for these courses at a later stage after their arrival and registration.

2. Most of the postgraduate students who come to Leeds would have had obtained their first degrees in Malaysian universities. It is therefore, recommended that the undergraduates in Malaysian universities should be encouraged to use CD-ROM databases that are available in their university libraries. Lecturers should incorporate their use in their lectures and the undergraduates should be motivated to use them. Libraries should be actively promoting their CD-ROM database service to the faculties, students and to their organisation's management. It is felt that after their graduation, those who have had the experience of using

CD-ROM databases would continue using them if they are available.

3. A similar study should be carried out in a Malaysian university in Kuala Lumpur. Through the findings, one would be able to determine whether there are any significant differences in the usage of CD-ROM databases between Malaysian postgraduate students in Leeds and in Kuala Lumpur.

4. Libraries and information centres in Malaysia should produce their in-house databases on CD-ROM. The sources and technology are currently available and should be utilised. The production of these localised databases would address the issue of the unsuitability of foreign databases for Malaysian libraries.

## CONCLUSION

Many writers have argued that CD-ROM is an interim technology that would not last and is waiting to be replaced by a more sophisticated information technology. But studies conducted throughout the world have shown that this is not going to be so. It is a technology that will stay and in most developing countries, it is regarded by many as the fastest growing technology in their libraries and information centres. CD-ROM databases have become the acceptable alternative to online searching and have also been well accepted in countries where the print equivalents are not readily available.

There is definitely a promising and bright future for CD-ROM technology in Malaysia. Librarians and information scientists should actively promote their use and the

use of other information sources if Malaysia is to be an information-rich country. It must be realised that the implementation of CD-ROM technology would help to close the information gap that exists between developed and developing countries. Libraries and information centres in developing countries are trying their best to keep up with the rapid advances in information technology. The availability of CD-ROM would hasten the process.

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## Appendix 1

## CD-ROM DATABASES IN THE MALAYSIAN NATIONAL AND ACADEMIC LIBRARIES \*

| DATABASE   | 1992 | 1993 | 1994 |
|--|------|------|------|
| ABI/Inform   | Y    | Y    | Y    |
| AGRICOLA on SilverPlatter                              | Y    | Y    | Y    |
| AGRIS  | Y    | Y    | Y    |
| AIDS Information and Education Worldwide               | -    | -    | Y    |
| Applied Science and Technology Index                   | Y    | Y    | Y    |
| Aquatic Sciences and Fisheries Abstracts (ASFA)        | Y    | Y    | Y    |
| BEASTCD  | -    | -    | Y    |
| Bibliofile Cataloging                                  | Y    | Y    | Y    |
| Biological Abstracts on Compact Disc                   | Y    | Y    | Y    |
| Biological & Agricultural Index                        | -    | -    | Y    |
| Biotechnology Abstracts on CD-ROM                      | -    | -    | Y    |
| BNB (British National Bibliography) on CD-ROM BOOKBANK | Y    | Y    | Y    |
| Bookfind   | -    | -    | Y    |
| Books in Print Plus                                    | Y    | Y    | Y    |
| Books Out of Print Plus                                | Y    | Y    | Y    |
| Business Periodicals Ondisc                            | -    | Y    | Y    |
| CABCD  | Y    | Y    | Y    |
| CABPESTCD  | -    | -    | Y    |
| CANCERLIT  | Y    | Y    | Y    |
| CASSIS   | Y    | Y    | -    |
| CAT CD450 Law Cataloguing Collection                   | -    | Y    | Y    |
| CAT CD450 Recent Books Cataloguing Collection          | Y    | Y    | Y    |
| CAT CD450 Older Books & Most-Used                      |      |      |      |
| Non-Book Cataloging Collection                         | Y    | Y    | Y    |
| CD-GENE  | -    | Y    | -    |
| CDMARC Bibliographic                                   | -    | -    | Y    |
| CDMARC Names   | Y    | Y    | Y    |
| CDMARC Subjects  | Y    | Y    | Y    |
| Chemical Abstracts                                     | Y    | Y    | -    |
| CITIS  | -    | Y    | Y    |
| Compendex Plus   | Y    | Y    | Y    |
| Computer Select  | -    | -    | Y    |
| CRIS/ICAR  | -    | -    | Y    |
| Dissertation Abstracts Ondisc                          | Y    | Y    | Y    |
| Earth Science  | -    | -    | Y    |
| EconLit  | -    | Y    | Y    |
| Education Index DATABASE                               | Y    | Y    | -    |
| Electromap World Atlas                                 | Y    | Y    | Y    |
| Electronic Dewey DDC 20                                | -    | -    | Y    |
| Engineering & Applied Science                          | -    | -    | Y    |
| ER Mapper 4.0  | -    | -    | Y    |
| ERIC   | Y    | Y    | Y    |
| Excerpta Medica CD : Immunology and AIDS               | -    | -    | Y    |
| Extel Financial Workstation Company Research Service   | -    | -    | Y    |
| The Family Doctor                                      | -    | -    | Y    |
| FHN in AGRIS   | -    | -    | Y    |
| FSTA (Food Science & Technology Abstracts)             | Y    | Y    | Y    |
| General Periodicals Index                              | -    | -    | Y    |
| General Periodicals Ondisc                             | -    | Y    | -    |
| General Periodicals Ondisc                             | -    | -    | Y    |
| GeoRef   | -    | Y    | Y    |
| Great Cities of the World                              | -    | -    | Y    |
| Grolier's Electronic Encyclopedia                      | Y    | Y    | Y    |
| The Guardian on CD-ROM                                 | Y    | Y    | Y    |



| DATABASE   | 1992 | 1993 | 1994 |
|--|------|------|------|
| Health for All : Primary Care & Consumer Information | -    | -    | Y    |
| HealthPLAN-CD on Silver Platter                      | -    | -    | Y    |
| HORTCD   | -    | -    | Y    |
| Humanities Index                                     | Y    | Y    | Y    |
| IEEE/IEE Inspec Index                                | -    | -    | Y    |
| Index to Legal Periodicals                           | -    | Y    | Y    |
| INSPEC Ondisc  | Y    | Y    | Y    |
| Inter.Pharmaceutical Abstracts (IPA)                 | -    | -    | Y    |
| Jane's All The World's Aircraft                      | -    | -    | Y    |
| The KGB World Factbook                               | -    | -    | Y    |
| KIT Abstracts  | Y    | Y    | Y    |
| LC Subject Heading                                   | Y    | Y    | Y    |
| LegalTrac  | -    | -    | Y    |
| Library Literature                                   | Y    | Y    | Y    |
| Life Sciences Collection                             | -    | -    | Y    |
| LISA Plus  | Y    | Y    | Y    |
| MathSci Disc Set                                     | -    | Y    | Y    |
| McGraw-Hill CD-ROM Sc & Tech Ref Set                 | Y    | Y    | -    |
| MEDLINE Standard                                     | Y    | Y    | Y    |
| Microsoft Bookshelf                                  | Y    | Y    | Y    |
| MLA International Bibliography                       | -    | Y    | Y    |
| MOVE : SAE Mobility Engineering                      | -    | -    | Y    |
| Technology on CD-ROM                                 | Y    | Y    | -    |
| Multilingual Dictionary Database                     | -    | -    | Y    |
| Multimedia Madness                                   | -    | -    | Y    |
| NAUTILUS   | Y    | Y    | -    |
| The New Electronic Encyclopedia                      | -    | -    | Y    |
| New HiFi Sound                                       | Y    | Y    | Y    |
| NTIS   | -    | Y    | Y    |
| Nursing & Allied Health (CINAHL)                     | -    | -    | Y    |
| The Oxford Eng Dict on Compact Disc                  | -    | -    | Y    |
| Oxford Writer's Shelf                                | -    | -    | Y    |
| PAIS International on SilverPlatter                  | -    | -    | Y    |
| PAIS on CD-ROM                                       | Y    | Y    | Y    |
| PC-SIG Library                                       | Y    | Y    | Y    |
| Periodical Abstracts                                 | Y    | -    | Y    |
| POLTOX   | Y    | Y    | Y    |
| POPLINE  | Y    | Y    | Y    |
| PsychLIT   | Y    | Y    | Y    |
| Readers' Guide to Periodical Literature              | -    | -    | Y    |
| Religion Index                                       | Y    | Y    | Y    |
| Science Citation Index                               | -    | Y    | Y    |
| SciTech Reference Plus                               | -    | Y    | -    |
| Singapore Trade Connection                           | -    | Y    | Y    |
| Social Science Citation Index                        | Y    | Y    | Y    |
| Social Science Index                                 | Y    | Y    | Y    |
| Sociofile  | -    | Y    | Y    |
| The Software Toolworks World Atlas                   | -    | -    | Y    |
| Singapore National Bibliography                      | -    | -    | Y    |
| SOILCD   | -    | -    | Y    |
| Statistical Masterfile                               | -    | Y    | Y    |
| Technology Reference Set                             | -    | Y    | -    |
| The Times & Sunday Times Compact Disc Ed             | Y    | Y    | Y    |
| TREED  | -    | -    | Y    |
| TROPAG & RURAL                                       | Y    | Y    | Y    |
| Ulrichs Plus   | Y    | Y    | Y    |
| Periodical Index                                     | Y    | Y    | -    |
| VETCD  | -    | -    | Y    |

| DATABASE                               | 1992 | 1993 | 1994 |
|--|------|------|------|
| Vital Signs : The Good Health Resource | -    | -    | Y    |
| Water Resources Abstracts              | -    | Y    | Y    |
| Women Partners in Development          | -    | Y    | Y    |

\* 1992 : Yaacob, R.A. The potential of CD-ROM technology in Malaysian libraries and information centers, *Asian Libraries*, July 1992, 18-33.

\* 1993 : Yaacob, R.A. Application of CD-ROM technology in Malaysian libraries and information centres : its growing importance In: *Online Information 93 : 17th International Online Information meeting proceedings, London, 7-9 December 1993*.

\* 1994 : Union catalogue of CD-ROMs of libraries in Malaysia. INTERNET.

## Appendix 2

### CD-ROM DATABASES IN MALAYSIAN SPECIAL LIBRARIES

| DATABASE                    | NO. OF LIBRARIES |      |
|-----------------------------|------------------|------|
|                             | 1992             | 1993 |
| ABI/Inform                  | 1                | 1    |
| AGRICOLA on SilverPlatter   | 2                | 2    |
| Books in Print Plus         | 1                | 2    |
| Books Out of Print Plus     | -                | 1    |
| Bookshelf                   | -                | 1    |
| Business Periodicals OnDisc | -                | 1    |
| CABCD                       | 2                | 2    |
| CASSIS                      | 1                | 1    |
| EP-ACCESS                   | -                | 1    |
| EP-BCT FIRST                | -                | 1    |
| EP-ESPACE                   | -                | 1    |
| INIS                        | 1                | 1    |
| MEDLINE                     | 1                | 1    |
| NIT                         | -                | 1    |
| Oxford Writer's Shelf       | -                | 1    |
| PERINORM                    | 1                | 1    |
| TREE-CD                     | -                | 1    |
| UK PATENT                   | -                | 1    |
| Ulrichs Plus                | 1                | 2    |
| UNESCO Databases            | -                | 1    |
| US ASIST                    | -                | 1    |
| WIPO & US PTO               | -                | 1    |

\* 1992 : Yaacob, R.A. The potential of CD-ROM technology in Malaysian libraries and information centers, *Asian Libraries*, July 1992, 18-33.

\* 1993 : Yaacob, R.A. Application of CD-ROM technology in Malaysian libraries and information centres : its growing importance In: *Online Information 93 : 17th International Online Information meeting proceedings, London, 7-9 December 1993*.



### Appendix 3

#### A SURVEY ON THE USE OF CD-ROM DATABASES BY MALAYSIAN POSTGRADUATE STUDENTS IN LEEDS

(All information will be treated with strict confidentiality. Please tick or fill in the appropriate spaces.)

Q1. Are you a male or a female?

Male ☐

Female ☐

Q2. How old are you?

21 to under 25 years ☐

25 to under 35 years ☐

35 to under 45 years ☐

45 or over ☐

Q3. Before coming to Leeds, were you working in Malaysia?

Yes ☐ (please state the place of employment)

.....

No ☐

Q4. What is the name of the university/institute/college that you are currently attending in Leeds?

.....

Q5. Which level of study are you currently at?

Postgraduate diploma ☐

M.Sc. ☐

M.A. ☐

M. Phil. ☐

Ph.D. ☐

Others (please specify) ☐ .....

Q6. What is the full name of the course you are currently pursuing?

.....

Q7. Have you used a CD-ROM database before coming to Leeds?

Yes ☐ (please specify the place and for what purpose)

.....

No ☐

Q8. Please specify the CD-ROM databases that you have used before coming to Leeds.

1.....

2.....

3.....

4.....

5.....

- 6.....
- 7.....
- 8.....
- 9.....
- 10.....

Q9. In your present university/institute/college in Leeds, do you use CD-ROM database?

- Yes ☐
- No ☐ (please proceed to Q24)

Q10. Please specify the CD-ROM databases that you have used in your present university/institute/college in Leeds.

- 1.....
- 2.....
- 3.....
- 4.....
- 5.....
- 6.....
- 7.....
- 8.....
- 9.....
- 10.....

Q11. What was the purpose of your search?

- Research paper ☐
- Thesis/dissertation ☐
- Article/book publication ☐
- Others (please specify) ☐ .....

Q12. How often do you use the CD-ROM databases?

- Once a week ☐
- More than once a week ☐
- Once a month ☐
- Once a semester ☐

Q13. Did you attend any training sessions prior to use?

- Yes ☐ (please specify type of training received)  
.....
- No ☐

Q14. Was the CD-ROM databases easy to use?

- Very easy ☐
- Easy ☐
- Neither ☐
- Difficult ☐
- Very difficult ☐



Q15. Were you satisfied with your CD-ROM search results?

Very satisfied ☐

Satisfied ☐

Neither ☐

Dissatisfied ☐

Very dissatisfied ☐

Q16. Did you obtain useful references? Yes ☐ No ☐

Q17. Did you find the references in your university library?

All ☐

Some ☐

None ☐

Q18. For references that were not available at your university library, did you request for ILL (Inter Library Loan)?

Yes ☐

No ☐

Q19. Do you use printed abstracts and indexes?

Yes ☐

No ☐

Q20. What do you like about CD-ROM databases?

Q21. What do you dislike about CD-ROM databases?

Q22. Would you recommend the purchase of CD-ROM databases to your organisation's library/information center in Malaysia and why?

Q23. Which CD-ROM databases would you recommend?

- 1.....
- 2.....
- 3.....
- 4.....
- 5.....
- 6.....
- 7.....
- 8.....
- 9.....
- 10.....

Q24. What are your reasons for not using CD-ROM databases?

Thank you for completing this questionnaire. Your kind assistance is greatly appreciated. Please send the completed questionnaire in the enclosed envelope:

Nor Edzan binti Che Nasir  
100 Markham Avenue  
Leeds LS8 4JB